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The Present Application

The present application describes a user model for multimedia communication network systems, including but not limited to interactive television systems. In one aspect, the user model organizes access devices into households. A household, for example, may have various access devices such as television set top boxes (STBs), personal computers (PCs), personal digital assistants (PDAs), cell phones, etc. The access devices are used for communication and consumption of media.

In the user model of the present invention, the household has a household "object" associated therewith. Each access device in the household has a corresponding access device "object" associated therewith. The access device objects are logical extensions of each other in the household object. For simplicity of discussion herein, a household object may otherwise be referred to as a "household" and an access device object may otherwise be referred to as an "access device."

In addition, each household can have multiple user objects representing multiple users or user profiles. For example, consider a household in which each of the parents and children of a family are represented by a corresponding user object in the household. Attributes and data associated with each user object may be used to define different access privileges possessed by each user in the household. A user object for a child may include a channel list that permits the child to access only those channels deemed appropriate by the child's parents. A user object for a parent may grant the privilege of purchasing pay per view programming that otherwise is withheld from a child. Different media access privileges for different users can be controlled by the different user objects in the household.

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Each user object in a household has its own independent configuration of attributes and data. This aspect of the present invention allows a user to create or reconfigure a user object by logging on to an authorized user object at any one of the access devices of the household. In one aspect, the other access devices (if any) in the household may automatically receive the user object information of a new or reconfigured user object without any further action by the user. This aspect advantageously allows a single operation to configure and/or reconfigure all of the access devices in a household with the information of a new or revised user object.

In another aspect, when a user adds a new access device to the household, the new access device may automatically receive the user object information of user objects already existing in the household, without any further action by the user. In one embodiment, this automatic exchange of user object information is coordinated by a server that stores the configuration information of each household and its associated user objects. This server, for example, can be operated by a multiple service operator (MSO) or service provider. Alternatively, the server may be at a broadcast center for a satellite broadcast system.

In another aspect, the information of a user object may be updated using a revision information file. An access device sends updated user object information to a server when a user changes the user object information of a user object via that access device. In one embodiment, the server receives the updated user object information and stores the updated information in a file corresponding to the user object. In addition, the server creates an update entry for the received update information, which is stored in a list. The update entry includes a ticket number and a bit vector, with the bit vector corresponding to the updated information being set. The ticket number is incremented for each new update entry. As noted at page 24, lines 2-5 of the present application, "[i]n one embodiment, the server increments the most recent ticket number the server has used and assigns this incremented ticket number to the received user object

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information. In this way, the server provides an identifier to each received set of user object information."

To update the user object information of a user object in a particular access device, the server receives the ticket number of the access device's current configuration for that user object. The server then determines an update vector for that access device as a function of the access device's bit vector, current ticket number, and more recent bit vectors from other access devices. In one embodiment, the server then provides the update vector to that access device. That access device can then request the updated user object information corresponding to each set bit in the update vector. This operation is performed for all of the access devices in the household on an ongoing basis.

Claims 1-3, 7-9, and 13-15 Are Patentable Over Williams

Turning now to the Office Action, applicants have carefully considered the Williams reference and the discussion in the Office Action, and respectfully disagree with the claim rejections based on Williams.

For the convenience of the Examiner, Claim 1 is repeated as follows:

1. A method of controlling access to content in a multimedia communication network system having a plurality of access devices, the method comprising:

receiving configuration information related to a user object from a user via an access device of the plurality of access devices, the configuration information defining multimedia content that can be accessed by instantiating the user object in an access device; and

providing the received configuration information to another access device of the plurality of access devices.

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In support of the rejection of Claim 1, the Examiner cited Williams at col. 5, lines 10-50 and col. 6, lines 30-50 as allegedly disclosing the claim element “receiving configuration information related to a user object from a user via an access device of the plurality of access devices, the configuration information defining multimedia content that can be accessed by instantiating the user object in an access device.” The Examiner further cited Williams at col. 8, line 60 to col. 9, line 30 and col. 10, lines 15-40 as allegedly disclosing the claim element “providing the received configuration information to another access device of the plurality of access devices.” (Office Action, pages 2-3).

After carefully reviewing the cited passages and indeed the entire disclosure of Williams, applicants find nothing that discloses these elements of the claimed invention. Williams is concerned with dynamically updating user preferences in an entertainment system by identifying a user from user activity with the entertainment system. While profile information for a user is maintained in Williams, there is no discussion of organizing the profile information into a user object that can be instantiated in an access device and provided to another access device of a plurality of access devices.

The cited passages at col. 5, lines 10-50 and col. 6, lines 30-50 of Williams discuss how a user in a plurality of users is automatically identified from passive user interaction with an entertainment system and how the entertainment system is modified using preference information for the identified user. The cited passages at col. 8, line 60 to col. 9, line 30 and col. 10, lines 15-40 provide additional detail as to how a user can be automatically identified from passive user interaction using a behavior log associated with the user, and how preference information can be obtained. Again, these passages do not anticipate the above-recited elements of Claim 1. For these reasons, applicants request reconsideration and allowance of Claim 1.

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In support of the rejection of Claim 2, the Examiner cited the same passages as above (col. 5, lines 10-50 and col. 6, lines 30-50) as allegedly further disclosing the claim element “receiving revised configuration information related to the user object via an access device of the plurality of access devices and providing the received revised configuration information to all of the access devices of the plurality of access devices.” Applicants do not agree that Williams teaches the claimed invention. Williams does not teach a system having a plurality of access devices nor does Williams teach providing revised configuration information for a user object to all of the access devices of the plurality of access devices. Claim 2 is not anticipated by Williams.

As for Claim 3, the Examiner again cited the same passages as above (col. 5, lines 10-50 and col. 6, lines 30-50) as allegedly further disclosing the claim element “receiving configuration information related to a plurality of user objects via one or more of the access devices of the plurality of access devices and providing the configuration information to all of the access devices of the plurality of access devices.” As discussed above, Williams teaches nothing about providing user object configuration information to all of the access devices of a plurality of access devices. Accordingly, applicants submit Claim 3 is patentable over Williams.

Claims 7-9 and 13-15 recite a control system and a machine-readable medium, respectively, that include elements similar to those discussed above with respect to Claims 1-3. For the same reasons expressed above, Claims 7-9 and 13-15 are also in allowable condition.

Claims 18-33, 35-38, and 40-43 Are Patentable Over Philyaw

Claim 18 recites as follows:

18. A method of providing configuration information related to a user object of a multimedia communication network system having a

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plurality of access devices, the configuration information including values for a plurality of configuration parameters, the method comprising:

receiving a portion of the configuration information related to a user object from a user via an access device of the plurality of access devices;

assigning a ticket number to the received portion of the configuration information;

storing the ticket number in a revision history; and

providing the ticket number to the access device.

In support of the rejection of Claim 18, the Examiner cited Philyaw at col. 23, lines 43-50 and col. 26, lines 10-27 as allegedly disclosing the claim element “receiving a portion of the configuration information related to a user object from a user via an access device of the plurality of access devices.” The Examiner further cited Philyaw at col. 29, lines 1-10 and 30-40 as allegedly disclosing the final three claim elements “assigning a ticket number to the received portion of the configuration information”, “storing the ticket number in a revision history”, and “providing the ticket number to the access device”. (Office Action, page 4).

After carefully reviewing Philyaw, including the cited passages, applicants do not find disclosure that anticipates the claimed invention. While Philyaw discusses automatic configuration of computer equipment, the disclosure fails to teach or suggest anything relating to receiving configuration information related a user object from a user via an access device in a system having a plurality of access devices. Moreover, the claimed aspects of assigning/storing/providing ticket numbers for user object configuration information is also not taught by Philyaw.

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The cited passages at col. 23, lines 43-50 and col. 26, lines 10-27 of Philyaw merely state that configuration information can be obtained for device driver software, firmware software, software updates for a particular software application, and operating mode information for the operation of hardware. This process of obtaining such information can be obtained by scanning a machine readable code (MRC). The cited passages at col. 29, lines 1-10 and 30-40 further state that a user can select a device driver version from a menu or an existing firmware version in a system can be determined. Again, these passages are not applicable to the elements of Claim 18.

At best, Philyaw teaches a software/firmware update procedure in which an installed version of software/firmware is compared to an available version and the available version is downloaded if it is newer. The concept of assigning and comparing version numbers of software applications, as taught by Philyaw, does not suggest (either inherently or explicitly) the claimed aspects of receiving user object configuration information from a user via an access device in a system having a plurality of access devices, and assigning/storing/providing ticket numbers for the user object configuration information. For these reasons, applicants request reconsideration and allowance of Claim 18.

In support of the rejection of Claim 19, the Examiner cited Philyaw at col. 45, line 50 to col. 46, line 10 as allegedly further disclosing the claim element “setting a bit in a bit vector, the bit vector having a plurality of bits each being associated to a corresponding configuration parameter of the user object; wherein the set bit indicates the configuration parameter associated with the received configuration information; and providing the bit vector to the access device.” This passage in Philyaw discusses reading a machine-readable code (MRC) and looking up a transaction code to confirm that a piece of equipment is eligible for accessing updated information. This does not teach or suggest a bit vector implementation for configuring a user object, as claimed. Claim 19 is not anticipated by Philyaw.

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As for Claim 20, the Examiner again cited Philyaw at col. 29, lines 1-10 and 30-40. As discussed above, this passage concerns user selection of a device driver version from a menu or determining an existing firmware version in a system. The concept of a revision history having a fixed size, as claimed, is not disclosed. Accordingly, applicants submit Claim 20 is patentable over Philyaw.

As for Claim 21, the Examiner again cited Philyaw at col. 29, lines 1-10 and 30-40. This passage concerning user selection of a device driver version from a menu or determining an existing firmware version in a system does not teach or suggest the claimed aspect of "providing the portion of the configuration information to a second access device of the plurality of access devices." Accordingly, applicants submit Claim 21 is patentable over Philyaw.

As for independent Claim 30, the Examiner cited Philyaw at col. 26, line 50 to col. 27, line 20 as allegedly disclosing the claim element "receiving an identifier from an access device of the plurality of access devices," and cited col. 28, line 55 to col. 29, line 40 as allegedly disclosing "determining an update vector as a function of the received identifier and any identifiers in the revision history that are more recent than the received identifier." The Examiner must bear in mind the context of these claim terms. The system in which the claimed method is implemented includes a system having a revision history configured to store "identifiers" and "bit vectors" associated with updates to configuration information related to a user object. These passages of Philyaw do not teach or suggest "receiving an identifier..." and determining an update vector..." as claimed. The Examiner also cited Philyaw at col. 29, lines 1-10 and 30-40 (discussed above) as allegedly disclosing "providing the update vector to the access device," but without any disclosure of an update vector as claimed, Philyaw cannot anticipate this aspect of the claim. Accordingly, for the above reasons, applicants submit that Claim 30 is patentable over Philyaw.

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As for Claim 31, the Examiner cited Philyaw at col. 26, lines 10-30 and col. 29, lines 1-10 and 30-40 as allegedly further disclosing the claim element “providing a portion of updated configuration information to the access device at the request of the access device, wherein the access device generates the request in response to the update vector.” Applicants do not find this aspect disclosed by Philyaw. Accordingly, applicants submit Claim 31 is patentable over Philyaw.

As for Claim 32, the Examiner again cited Philyaw at col. 29, lines 1-10 and 30-40 as allegedly further disclosing the claim element “providing to the access device the most recent identifier of the identifiers used in determining the update vector.” As discussed above, Philyaw does not anticipate this element. Disclosure of maintaining versions of software drivers and other applications is not equivalent to teaching a process of determining an update vector using identifiers, as claimed. Accordingly, applicants submit Claim 32 is patentable over Philyaw.

Turning to Claim 33, the Examiner again cited Philyaw at col. 29, lines 1-10 and 30-40 as allegedly further disclosing the claim element “wherein determining the update vector further comprises generating the update vector as a function of the bit vectors associated with the identifiers that are more recent than the received identifier” As discussed above, Philyaw teaches nothing about generating update vectors as a function of bit vectors, as claimed. Accordingly, applicants submit Claim 33 is patentable over Philyaw.

Claims 22-25 and 26-29 recite an update system and a machine-readable medium, respectively, that include elements similar to those discussed above with respect to Claims 18-21. For the same reasons expressed above, Claims 22-25 and 26-29 are also in allowable condition.

Claims 35-38 and 40-43 recite a machine-readable medium and an update system, respectively, that include elements similar to those discussed above with respect to Claims 30-

33. For the same reasons expressed above, Claims 35-38 and 40-43 are also in allowable condition.

Claims 4-6, 10-12, and 16-17 Are Patentable Over Williams in view of Philyaw

Claim 4 depends from Claim 3 and further recites "assigning a ticket number to the revised configuration information." Claim 5 depends from Claim 4 and further recites "storing the ticket number in a revision history in the multimedia communication network system." Claim 6 depends from Claim 5 and further recites "wherein the revision history is stored in a server of the multimedia communication network system."

As discussed above, Williams does not anticipate all the elements recited in Claim 3 nor in Claim 1. The deficiency of disclosure in Williams is not cured by Philyaw. Further, as discussed with respect to Claim 18, Philyaw at best teaches a software/firmware update procedure in which an installed version of software/firmware is compared to an available version and the available version is downloaded if it is newer. The concept of assigning and comparing version numbers of software applications, as taught by Philyaw, does not suggest (either inherently or explicitly) the claimed aspects of assigning and storing ticket numbers in a revision history for the user object configuration information. Claims 4-6 are patentable over Williams and Philyaw. Likewise, Claims 10-12 and 16-17, which recite similar elements, are also patentable over Williams and Philyaw.

Claims 34, 39, and 44 Are Patentable Over Philyaw in view of Mi

Claim 34 depends from Claim 33 and further recites "the function of the bit vectors comprises the logical-OR of the bit vectors associated with the identifiers that are more recent than the received identifier." For the reasons discussed above relative to Claim 33, Claim 34 is